Complete Summary

GUIDELINE TITLE

Disorders of the neck and upper back.

BIBLIOGRAPHIC SOURCE(S)

Work Loss Data Institute. Disorders of the neck and upper back. Corpus Christi (TX): Work Loss Data Institute; 2003. 109 p. [124 references]

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
CONTRAINDICATIONS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY

SCOPE

DISEASE/CONDITION(S)

Work-related disorders of the neck and upper back

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Chiropractic
Family Practice
Internal Medicine
Neurological Surgery
Neurology

INTENDED USERS

Advanced Practice Nurses
Health Care Providers
Health Plans
Nurses
Physicians

GUIDELINE OBJECTIVE(S)

To offer evidence-based step-by-step decision protocols for the assessment and treatment of workers' compensation conditions

TARGET POPULATION

Workers with occupational disorders of the neck and upper back

INTERVENTIONS AND PRACTICES CONSIDERED

1. Bone scan
2. Botulinum toxin A
3. Botulinum toxin B
4. Chiropractic care/manipulation
5. Cold packs
6. Computed tomography (CT)
7. Corticosteroid injections
8. Discography
9. Discectomy
10. Electromyography (EMG)
11. Epidural steroid injection (ESI)
12. Exercise
13. Fusion
14. H-reflex tests
15. Heat/cold applications
16. Laminectomy
17. Laminoplasty
18. Magnetic resonance imaging (MRI)
19. Methylprednisolone (high-dose)
20. Myelography
21. Nonprescription medications (e.g., acetaminophen, nonsteroidal anti-inflammatory drugs [NSAIDs])
22. Patient education
23. Physical therapy
24. Radio-frequency neurotomy
25. Radiography
26. Sensory evoked potentials (SEPS)
27. Steroids
28. Stretching
29. Surgery
30. Therapeutic exercises

The following interventions were considered, but are not currently recommended or not included as major recommendations:

1. Acupuncture
2. Bed rest
3. Biofeedback
4. Cervical orthosis
5. Chymopapain
6. Cognitive behavioral rehabilitation
7. Collars
8. Diathermy
9. Electromagnetic therapy
10. Electrotherapies
11. Immobilization
12. Laser therapy
13. Massage
14. Multidisciplinary biopsychosocial rehabilitation
15. Percutaneous radio-frequency neurotomy
16. Soft collars
17. Thermotherapy
18. Traction
19. Transcutaneous electrical neurostimulation (TENS)
20. Trigger point injections
21. Ultrasound

MAJOR OUTCOMES CONSIDERED

- Diagnostic value of tests
- Effectiveness of treatments for relieving pain and restoring normal function

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Ranking by quality within type of evidence:

a. High Quality
b. Medium Quality
c. Low Quality

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

The guideline developers reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Identify Neurologic Findings

- First visit: may be with Primary Care Physician MD/DO (50%), Orthopedist (35%), or Chiropractor (15%)
- Determine Neurologic Findings -- Initial Evaluation:

  History

  - Note any previous neck problems or related disabilities.
  - Determine the onset of the injury and any direct trauma, head injury, or fall.

- Determine any history of repetitive micro trauma to the neck and any initial acute episode of pain or whiplash injury.
- Search for any symptoms of possible neurologic impairment, such as weakness in an upper extremity, numbness, or radicular pain radiating into upper extremities.
- Note any psychosocial problems, such as substance abuse, job dissatisfaction, conflict with supervisors, marital problems, and/or financial problems.
- Determine relevant medical history, history of systemic disease, or previous neck injury or disability. Note any history which produces radiating pain in the neck from structures such as the thyroid, the lymph nodes, the esophagus, or the trachea, or from a Pancoast tumor in the apex of the lung. Note any history of cancer.
- Grade the patient's pain on a scale of 0-1-2-3-4-5, with 0 being no pain.

Physical Examination

- Perform a comprehensive examination of the neck and upper extremities including attention to flexibility, strength, and range-of-motion of the neck.
- Perform a careful limited neurological examination of the neck and the upper and lower extremities to determine which diagnostic tests and therapy should be performed. This examination should include reflexes of the biceps, triceps, and brachioradialis tendons and those of the lower extremities, as well as weakness and sensory changes to pin prick by anatomical area (dermatomes) when needed.
- Search for any evidence of weakness or atrophy of muscle groups of the arm.
- Search for any signs of systemic disease.
- Note that any patient with an acute injury and positive neurologic findings with an acute injury requires a neck splint and referral to a spinal surgeon.

Imaging

- Imaging modalities are often not necessary for patients with typical acute neck pain, but due to the risk of treating patients with undiagnosed cervical vertebral fractures, x-rays are necessary if there is any possibility of a fracture, even in patients without neurologic findings. Any patient with a minimal fracture of the cervical spine should have a computed tomography (CT) scan to evaluate the status of the neural arch.
- Indications for x-rays of the cervical spine include the following:
    - A history of direct trauma, blow to the head, any significant whiplash type injury, or any significant fall. These patients should have an x-ray of the cervical spine. Patients with fractures of the cervical spine should be referred to a spinal surgeon.
    - Whiplash with any evidence of neurologic deficit or persistent pain

        - Chronic, slow onset of pain, especially if it is increasing or night pain
        - A history of systemic disease such as cancer, long-term steroid therapy, or alcohol abuse
        - Patients over 50 years of age with any question of etiology of symptoms
        - Patients with significant stiffness of the cervical spine
        - Lateral flexion and extension views may demonstrate instability of the spine and indicate the need for consultation even in the absence of a fracture. (fingertip test), muscle atrophy (calf measurement), local areas of tenderness, visual pain analog
    - Indications for magnetic resonance imaging (MRI) of the cervical spine include the following:
        - Any suggestion of abnormal neurologic findings below the level of injury
        - Progressive neurologic deficit
        - Persistent unremitting pain with or without positive neurologic findings
        - Previous herniated intervertebral disk within the last two years and radicular pain with positive neurologic findings
        - Patients with significant neurologic findings and failure to respond to conservative therapy despite compliance with the therapeutic regimen

    Imaging procedures such as CT scans are necessary for any fracture of the cervical spine, with referral to a spinal surgeon. Additional imaging procedures, such as bone scan or myelography, have special indications and are rarely needed at this stage, unless strong evidence of systemic disease exists and further evaluations thought necessary by the spinal surgeon. Other tests such as electromyography (EMG) or nerve conduction studies are not necessary in the initial evaluation of patients with new symptoms, due to the fact that these tests will not become positive until four to six weeks after the onset of symptoms. An EMG is not necessary for the diagnosis of intervertebral disk disease with radiculopathy; rather, its value lies in differentiating other types of neuritis, neuropathy, or muscle abnormalities from radicular neuropathy and for cases where the etiology of the pain is not clear. An EMG is most appropriate to perform after an evaluation by a specialist.

- Presumptive Diagnosis (see original guideline document for ICD-9 codes)
    - Without Neurologic Findings
        - Neck pain with no radiation of pain beyond the neck area
        - Neck pain with radiation of pain in shoulders and upper back, but with no radicular signs
        - Chronic neck pain or chronic neck problems
    - With Neurologic Findings
        - Fracture of cervical spine
        - Radicular pain and positive signs indicate a presumptive diagnosis of herniated intervertebral disk
        - Neurologic signs and symptoms at the cervical level and in the lower body or lower extremities

- Radicular pain and positive signs indicate a presumptive diagnosis of herniated intervertebral disk and an MRI or CT scan shows positive findings of a herniated intervertebral disk that matches the clinical findings

Without Neurologic Findings (95% of cases)

- Also first visit (day 1):
  - Prescribe decreased activity if necessary based on severity and difficulty of job, passive therapy with heat/ice (3 to 4 times/day), stretching, appropriate analgesia (i.e., acetaminophen) and/or anti-inflammatory (i.e., ibuprofen) [Benchmark cost: $14], back to work except for severe cases in 72 hours, possibly modified duty. Avoid bed rest.
  - No x-rays unless major trauma (e.g., a fall)
  - If muscle spasms, then prescribe muscle relaxant with limited sedative side effects [Benchmark cost: $44]
  - Reassure patient: common problem (90% of patients recover spontaneously in 4 weeks)

Official Disability Guidelines (ODG) Return-To-Work Pathways (neck sprain)

Whiplash grade 0 (Quebec Task Force grades): 0 days

- Second visit (day 7 – about 1 week after first visit)
  - Document progress (flexibility, areas of tenderness, motor strength).
  - If still 50% disabled then prescribe manual therapy [Benchmark cost: $250]: Refer to massage therapist, chiropractor, physical therapist, or occupational therapist (3 visits in first week), or by treating DO
  - Probably discontinue muscle relaxant.

ODG Return-To-Work Pathways (neck sprain)

Whiplash grade I-III, clerical/modified work: 5 days

- Third visit (day 14 – about 1 week after second visit)
  - Document progress.
  - Prescribe muscle-conditioning exercises.
  - At this point 66 to 75% should be back to regular work
  - If still disabled, then first imaging study (anteroposterior [AP]/lateral 2-view x-ray of lumbar) [Benchmark cost: $150] to rule out cervical spondylolysis or joint narrowing/spinal stenosis (age related, not caused by recent trauma – will not change treatment)
  - Continue therapist, change from passive to active modality, 2 visits in next week, teach home exercises
  - End manual therapy at 4 weeks.

ODG Return-To-Work Pathways (neck sprain)

Whiplash grade I-III, manual work: 21 days

Whiplash grade I-III, heavy manual work: 28 days

With Neurologic Findings (5% of cases)

- Also first visit (day 1)
  - Same as non-radicular, but
  - Prescribe a Medrol Dose Pack (5-day steroids, generic) [Benchmark cost: $120]

ODG Return-To-Work Pathways (cervical disc disorders)

Mild cases with back pain, avoid strenuous activity: 0 days

Initial conservative medical treatment, clerical/modified work: 0--3 days

- Second visit (day 7 – about 1 week after first visit)
  - Same as non-radicular, but
  - Reassure, but warn of increased numbness or weakness of either leg: if so, get back to provider in one day
  - Consider an epidural steroid injection (ESI) for severe cases hoping to avoid surgery [Benchmark cost: $376].
  - Consider referral to musculoskeletal physician (orthopedist/physical medicine/sports medicine).
- Third visit (day 14 – about 72 hours after ESI)
  - Same as non-radicular, but
  - About 50% can be back at modified duty
  - If improvement, then add strengthening exercises, increased activity
  - If no improvement, prescribe second ESI (7-10 days after first) [Benchmark cost: $315]
- Fourth visit (day 21 to 28 – about 72 hours after second ESI)
  - Document, if no improvement then:
  - First MRI (about 3% of total cases, or 30% of cases with neurologic symptoms) to confirm extruded disk with nerve root displacement [Benchmark cost: $1,600]
  - MRI or CT not indicated without obvious clinical level of nerve root dysfunction or before 3 to 4 weeks
  - Bone scan if spondylolisthesis
  - Second MRI only if progression of neurological symptoms (less than 1% of cases)
  - Refer to fellowship-trained Spine Surgeon: Neurosurgeon (50%), orthopedist (50%)
  - Before surgery, screen for psychological symptoms that could affect surgical outcome (e.g., substance abuse, child abuse, work conflicts, somatization, verbalizations, attorney involvement, smoking)
  - Possibly refer to psychologist for testing (Minnesota Multiphasic Personality Inventory [MMPI] or, better, Waddell test) [Benchmark cost: $540]

ODG Return-To-Work Pathways (cervical disc disorders)

Initial conservative medical treatment, manual work: 35 days

- Surgery (day 28 to 35) (about 2% of total cases, or 20% of radicular cases)
  - Review options/outcomes with patient, let patient decide
  - Simple discectomy/laminectomy, minimally invasive [Benchmark cost: $17,400]
  - Outpatient (23 hour stay)
  - Post-operative pain, walking exercises

ODG Return-To-Work Pathways (cervical disc disorders)

Cervical discectomy, clerical/modified work: 28--56 days

Cervical discectomy, manual work: 56 days

Cervical discectomy, heavy manual work: indefinite

Cervical laminectomy/decompression, clerical/modified work: 28 days

Cervical laminectomy/decompression, manual work: 63 days

Cervical laminectomy/decompression, heavy manual work: indefinite

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

During the comprehensive medical literature review, preference was given to high quality systematic reviews, meta-analyses, and clinical trials over the past ten years, plus existing nationally recognized treatment guidelines from the leading specialty societies.

The type of evidence associated with each recommended or considered intervention or procedure is ranked in the guideline's annotated reference summaries.

Ranking by Type of Evidence:

1. Systematic Review/Meta-Analysis
2. Controlled Trial–Randomized (RCT) or Controlled
3. Cohort Study--Prospective or Retrospective
4. Case Control Series
5. Unstructured Review

6. Nationally Recognized Treatment Guideline (from www.guideline.gov)
7. State Treatment Guideline
8. Foreign Treatment Guideline
9. Textbook
10. Conference Proceedings/Presentation Slides

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

These guidelines unite evidence-based protocols for medical treatment with normative expectations for disability duration. They also bridge the interests of the many professional groups involved in diagnosing and treating work-related disorders of the neck and upper back.

POTENTIAL HARMS

- Several reports have, in rare instances, linked chiropractic manipulation of the neck in patients 45 years of age and younger to dissection or occlusion of the vertebral artery. The rarity of cerebrovascular accidents makes any association unclear at this time and difficult to study.
- Risks of adverse effects from discography and surgery

CONTRAINDICATIONS

CONTRAINDICATIONS

Chiropractic manipulation of the neck is contraindicated in patients with a risk of stroke.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Work Loss Data Institute. Disorders of the neck and upper back. Corpus Christi (TX): Work Loss Data Institute; 2003. 109 p. [124 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003

GUIDELINE DEVELOPER(S)

Work Loss Data Institute - Public For Profit Organization

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available to subscribers from the Work Loss Data Institute Web site.

Print copies: Available from the Work Loss Data Institute, 169 Saxony Road, Suite 210, Encinitas, CA 92024; Phone: 800-488-5548, 760-753-9992, Fax: 760-753-9995; www.worklossdata.com.

AVAILABILITY OF COMPANION DOCUMENTS

Background information on the development of the Official Disability Guidelines of the Work Loss Data Institute is available from the Work Loss Data Institute Web site.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on February 2, 2004. The information was verified by the guideline developer on February 13, 2004.

COPYRIGHT STATEMENT

Date Modified: 11/8/2004